



SEQUENCE LISTING

<110> Altmann, Scott W

Wang, Luquan

Graziano, Michael

Murgolo, Nick

<120> NPC1L1 (NPC3) AND METHODS OF USE THEREOF

<130> JB01603K2 US

<140> 10/663,208

<141> 2003-09-16

<150> 60/397,442

<151> 2002-07-19

<150> 10/621,758

<151> 2003-07-17

<150> 10/646,301

<151> 2003-08-22

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<170> PatentIn version 3.1

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Ala Ala Gln Gly Glu Leu Tyr Thr Pro Lys His Glu Ala Gly Val Cys			
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acc ttt tac gaa gag tgc ggg aaa aac cca gag ctc tct gga ggc ctc			144
Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu			
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Thr Ser Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg His			
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Val Thr Gly Glu His Leu Ala Leu Leu Gln Arg Ile Cys Pro Arg Leu			
65 70 75 80			
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Tyr Asn Gly Pro Asn Thr Phe Ala Cys Cys Ser Thr Lys Gln Leu			
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ctg tcc tta gaa agc agc atg tcc atc acc aag gcc ctt ctc acg cgc			336
Leu Ser Leu Glu Ser Ser Met Ser Ile Thr Lys Ala Leu Leu Thr Arg			
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Cys Pro Ala Cys Ser Asp Asn Phe Val Ser Leu His Cys His Asn Thr			
115 120 125			
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Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Glu			
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Arg Gly Ala Gly Glu Pro Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr			
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Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Gln Val Arg			
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Ile Pro Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr			
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Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp			
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Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu			

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gaa gcc ccc aaa ctc cct cat aag cac aaa ctc tca ccc cat acc atc Glu Ala Pro Lys Leu Pro His Lys His Lys Leu Ser Pro His Thr Ile 325	330	335	1008
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tct gag gcc atc tgc ttc ttt cta ggg gcc ctg acc ccc atg cca gct Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala 755 760 765	2304
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cgc aag ata tac gct cct ttc ctg ctg cac aga ttc atc cgc cct gtt Arg Lys Ile Tyr Ala Pro Phe Leu Leu His Arg Phe Ile Arg Pro Val 835 840 845	2544
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Leu	Thr	Pro	Ser	Ser	Ser	Cys	Cys	Cys	Arg	Leu	Tyr	Ile	Arg	Gly	Pro	His
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Lys	Asp	Glu	Phe	Cys	Pro	Ser	Thr	Asp	Thr	Ser	Phe	Asn	Cys	Leu	Lys	
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Asn	Cys	Met	Asn	Arg	Thr	Leu	Gly	Pro	Val	Arg	Pro	Thr	Ala	Glu	Gln	
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Phe	His	Lys	Tyr	Leu	Pro	Trp	Phe	Leu	Asn	Asp	Pro	Pro	Asn	Ile		
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aga	tgt	ccc	aaa	ggg	ggt	cta	gca	gcg	tat	aga	acg	tct	gtg	aat		3114
Arg	Cys	Pro	Lys	Gly	Gly	Leu	Ala	Ala	Tyr	Arg	Thr	Ser	Val	Asn		
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Leu	Ser	Ser	Asp	Gly	Gln	Val	Ile	Ala	Ser	Gln	Phe	Met	Ala	Tyr		
					1040			1045				1050				
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His	Lys	Pro	Leu	Arg	Asn	Ser	Gln	Asp	Phe	Thr	Glu	Ala	Leu	Arg		
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Ala	Ser	Arg	Leu	Leu	Ala	Ala	Asn	Ile	Thr	Ala	Asp	Leu	Arg	Lys		
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Val	Pro	Gly	Thr	Asp	Pro	Asn	Phe	Glu	Val	Phe	Pro	Tyr	Thr	Ile		
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Ser	Asn	Val	Phe	Tyr	Gln	Gln	Tyr	Leu	Thr	Val	Leu	Pro	Glu	Gly		
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atc	ttc	acc	ctt	gct	ctt	tgc	ttt	gt	ccc	acc	ttt	gtt	gtc	tgc		3384
Ile	Phe	Thr	Leu	Ala	Leu	Cys	Phe	Val	Pro	Thr	Phe	Val	Val	Cys		
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tac	ctc	cta	ctg	ggc	ctg	gac	atg	tgc	tca	ggg	atc	ctc	aac	cta		3429
Tyr	Leu	Leu	Leu	Gly	Leu	Asp	Met	Cys	Ser	Gly	Ile	Leu	Asn	Leu		
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ctc	tcc	atc	att	atg	att	ctc	gt	gac	acc	att	ggc	ctc	atg	gct		3474
Leu	Ser	Ile	Ile	Met	Ile	Leu	Val	Asp	Thr	Ile	Gly	Leu	Met	Ala		
					1145			1150				1155				
gtg	tgg	ggt	atc	agc	tat	aat	gcg	gta	tcc	ctc	atc	aac	ctt	gtc		3519
Val	Trp	Gly	Ile	Ser	Tyr	Asn	Ala	Val	Ser	Leu	Ile	Asn	Leu	Val		
					1160			1165				1170				
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Thr	Ala	Val	Gly	Met	Ser	Val	Glu	Phe	Val	Ser	His	Ile	Thr	Arg		

1175	1180	1185		
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Ser Phe	Ala Val Ser Thr Lys	Pro Thr Arg Leu Glu	Arg Ala Lys	
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Asp Ala	Thr Val Phe Met Gly	Ser Ala Val Phe Ala	Gly Val Ala	
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atg acc	aac ttc cca ggc atc	ctc atc ttg ggc ttt	gcc caa gcc	3699
Met Thr	Asn Phe Pro Gly Ile	Leu Ile Leu Gly Phe	Ala Gln Ala	
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Gln Leu	Ile Gln Ile Phe Phe	Phe Arg Leu Asn Leu	Leu Ile Thr	
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Leu Leu	Gly Leu Leu His Gly	Leu Val Phe Leu Pro	Val Val Leu	
1250	1255	1260		
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Ser Tyr	Leu Gly Pro Asp Val	Asn Gln Ala Leu Val	Gln Glu Glu	
1265	1270	1275		
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Lys Leu	Ala Ser Glu Ala Ala	Val Ala Pro Glu Pro	Ser Cys Pro	
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Gln Tyr	Pro Ser Pro Ala Asp	Ala Asp Ala Asn Val	Asn Tyr Gly	
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Phe Ala	Pro Glu Leu Ala His	Gly Ala Asn Ala Ala	Arg Ser Ser	
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<213> Rattus sp.

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Tyr Asn Gly Pro Asn Thr Thr Phe Ala Cys Cys Ser Thr Lys Gln Leu
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Leu Ser Leu Glu Ser Ser Met Ser Ile Thr Lys Ala Leu Leu Thr Arg
100 105 110

Cys Pro Ala Cys Ser Asp Asn Phe Val Ser Leu His Cys His Asn Thr
115 120 125

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Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Gln Val Arg
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Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
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225 230 235 240

Ala Pro Cys Asn Glu Ser Gln Gly Asp Asp Ser Ala Val Cys Ser Cys
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Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Glu Ala Leu
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Leu Arg Val Val Ser Asn Arg Asn Lys Asn Lys Ala Glu Gly Pro Gln
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Glu Ala Pro Lys Leu Pro His Lys His Lys Leu Ser Pro His Thr Ile
325 330 335

Leu Gly Arg Phe Phe Gln Asn Trp Gly Thr Arg Val Ala Ser Trp Pro
340 345 350

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Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
370 375 380

Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ser Phe His Asp Glu His
385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Arg Asn
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Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Leu Gly Ser Lys Asn Phe
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Ser Gly Ile Leu Ser Leu Asp Phe Leu Leu Glu Leu Leu Glu Leu Gln
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Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Glu Arg Asn
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Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Tyr Asn Thr
465 470 475 480

Ser Leu Ser Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn
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Asn Arg Thr Leu Leu Met Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln
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595 600 605

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610 615 620

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Cys Ser Arg Val Ala Val Glu Ser Lys Ala Thr Leu Gly Leu Gly Gly
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Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe
690 695 700

Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
705 710 715 720

Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile
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Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu
740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala

755

760

765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Leu Asp Phe
770 775 780

Leu Leu Gln Met Thr Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785 790 795 800

Arg Gln Glu Ala Ser Arg Pro Asp Val Leu Cys Cys Phe Ser Thr Arg
805 810 815

Lys Leu Pro Pro Pro Lys Glu Gly Leu Leu Leu Arg Phe Phe
820 825 830

Arg Lys Ile Tyr Ala Pro Phe Leu Leu His Arg Phe Ile Arg Pro Val
835 840 845

Val Met Leu Leu Phe Leu Thr Leu Phe Gly Ala Asn Leu Tyr Leu Met
850 855 860

Cys Asn Ile Asn Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
865 870 875 880

Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val
885 890 895

Gly Pro Pro Val Tyr Phe Val Thr Thr Ser Gly Phe Asn Phe Ser Ser
900 905 910

Glu Ala Gly Met Asn Ala Thr Cys Ser Ser Ala Gly Cys Lys Ser Phe
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Ser Leu Thr Gln Lys Ile Gln Tyr Ala Ser Glu Phe Pro Asp Gln Ser
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Tyr Val Ala Ile Ala Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
945 950 955 960

Leu Thr Pro Ser Ser Ser Cys Cys Arg Leu Tyr Ile Arg Gly Pro His
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Lys Asp Glu Phe Cys Pro Ser Thr Asp Thr Ser Phe Asn Cys Leu Lys
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Asn Cys Met Asn Arg Thr Leu Gly Pro Val Arg Pro Thr Ala Glu Gln
995 1000 1005

Phe His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Pro Pro Asn Ile
1010 1015 1020

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His Lys Pro Leu Arg Asn Ser Gln Asp Phe Thr Glu Ala Leu Arg
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Ala Ser Arg Leu Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys
1070 1075 1080

Val Pro Gly Thr Asp Pro Asn Phe Glu Val Phe Pro Tyr Thr Ile
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Ser Asn Val Phe Tyr Gln Gln Tyr Leu Thr Val Leu Pro Glu Gly
1100 1105 1110

Ile Phe Thr Leu Ala Leu Cys Phe Val Pro Thr Phe Val Val Cys
1115 1120 1125

Tyr Leu Leu Leu Gly Leu Asp Met Cys Ser Gly Ile Leu Asn Leu
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Leu Ser Ile Ile Met Ile Leu Val Asp Thr Ile Gly Leu Met Ala
1145 1150 1155

Val Trp Gly Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val
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Thr Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg
1175 1180 1185

Ser Phe Ala Val Ser Thr Lys Pro Thr Arg Leu Glu Arg Ala Lys
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Asp Ala Thr Val Phe Met Gly Ser Ala Val Phe Ala Gly Val Ala
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Met Thr Asn Phe Pro Gly Ile Leu Ile Leu Gly Phe Ala Gln Ala
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Gln Leu Ile Gln Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr
1235 1240 1245

Leu Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Val Leu
1250 1255 1260

Ser Tyr Leu Gly Pro Asp Val Asn Gln Ala Leu Val Gln Glu Glu
1265 1270 1275

Lys Leu Ala Ser Glu Ala Ala Val Ala Pro Glu Pro Ser Cys Pro
1280 1285 1290

Gln Tyr Pro Ser Pro Ala Asp Ala Asp Ala Asn Val Asn Tyr Gly
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Phe Ala Pro Glu Leu Ala His Gly Ala Asn Ala Ala Arg Ser Ser
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Leu Pro Lys Ser Asp Gln Lys Phe
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cgc ttg gcc cag agt gag cct tac aca acc atc cac cag cct ggc tac 96
Arg Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr
20 25 30

tgc gcc ttc tat gac gaa tgt ggg aag aac cca gag ctg tct gga agc 144
Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser
35 40 45

ctc atg aca ctc tcc aac gtg tcc tgc ctg tcc aac acg ccg gcc cgc	192
Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg	
50 55 60	
aag atc aca ggt gat cac ctg atc cta tta cag aag atc tgc ccc cgc	240
Lys Ile Thr Gly Asp His Leu Ile Leu Gln Lys Ile Cys Pro Arg	
65 70 75 80	
ctc tac acc ggc ccc aac acc caa gcc tgc tgc tcc gcc aag cag ctg	288
Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu	
85 90 95	
gta tca ctg gaa gcg agt ctg tcg atc acc aag gcc ctc ctc acc cgc	336
Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg	
100 105 110	
tgc cca gcc tgc tct gac aat ttt gtg aac ctg cac tgc cac aac acg	384
Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr	
115 120 125	
tgc agc ccc aat cag agc ctc ttc atc aat gtg acc cgc gtg gcc cag	432
Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln	
130 135 140	
cta ggg gct gga caa ctc cca gct gtg gtg gcc tat gag gcc ttc tac	480
Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr	
145 150 155 160	
cag cat agc ttt gcc gag cag agc tat gac tcc tgc agc cgt gtg cgc	528
Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg	
165 170 175	
gtc cct gca gct gcc acg ctg gct gtg ggc acc atg tgt ggc gtg tat	576
Val Pro Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr	
180 185 190	
ggc tct gcc ctt tgc aat gcc cag cgc tgg ctc aac ttc cag gga gac	624
Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp	
195 200 205	
aca ggc aat ggt ctg gcc cca ctg gac atc acc ttc cac ctc ttg gag	672
Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu	
210 215 220	
cct ggc cag gcc gtg ggg agt ggg att cag cct ctg aat gag ggg gtt	720
Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val	
225 230 235 240	
gca cgt tgc aat gag tcc caa ggt gac gac gtg gcg acc tgc tcc tgc	768
Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys	
245 250 255	
caa gac tgt gct gca tcc tgt cct gcc ata gcc cgc ccc cag gcc ctc	816
Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu	
260 265 270	
gac tcc acc ttc tac ctg ggc cag atg ccg ggc agt ctg gtc ctc atc	864
Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile	
275 280 285	

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ttc cgt gtg gcc ccc gcc agg gac aaa agc aag atg gtg gac ccc aag Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys 305 310 315 320	960
aag ggc acc agc ctc tct gac aag ctc agc ttc tcc acc cac acc ctc Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu 325 330 335	1008
ctt ggc cag ttc cag ggc tgg ggc acg tgg gtg gct tcg tgg cct Leu Gly Gln Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro 340 345 350	1056
ctg acc atc ttg gtg cta tct gtc atc ccg gtg gtc ttg gca gcg Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala 355 360 365	1104
ggc ctg gtc ttt aca gaa ctc act acg gac ccc gtg gag ctg tgg tcg Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser 370 375 380	1152
gcc ccc aac agc caa gcc cgg agt gag aaa gct ttc cat gac cag cat Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His 385 390 395 400	1200
ttc ggc ccc ttc ttc cga acc aac cag gtg atc ctg acg gct cct aac Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn 405 410 415	1248
cggtcc agc tac agg tat gac tct ctg ctg ctg ggg ccc aag aac ttc Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe 420 425 430	1296
agc gga atc ctg gac ctg gac ttg ctg ctg gag ctg cta gag ctg cag Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln 435 440 445	1344
gag agg ctg cgg cac ctc cag gta tgg tcg ccc gaa gca cag cgc aac Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn 450 455 460	1392
atc tcc ctg cag gac atc tgc tac gtc ccc ctc aat ccg gac aat acc Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr 465 470 475 480	1440
agt ctc tac gac tgc tgc atc aac agc ctc ctg cag tat ttc cag aac Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn 485 490 495	1488
aac cgc acg ctc ctg ctc aca gcc aac cag aca ctg atg ggg cag Asn Arg Thr Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln 500 505 510	1536
acc tcc caa gtc gac tgg aag gac cat ttt ctg tac tgt gcc aat gcc Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala 515 520 525	1584
ccg ctc acc ttc aag gat ggc aca gcc ctg gcc ctg agc tgc atg gct	1632

Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala			
530	535	540	
gac tac ggg gcc cct gtc ttc ccc ttc ctt gcc att ggg ggg tac aaa			1680
Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys			
545	550	555	560
gga aag gac tat tct gag gca gag gcc ctg atc atg acg ttc tcc ctc			1728
Gly Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu			
565	570	575	
aac aat tac cct gcc ggg gac ccc cgt ctg gcc cag gcc aag ctg tgg			1776
Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp			
580	585	590	
gag gag gcc ttc tta gag gaa atg cga gcc ttc cag cgt cgg atg gct			1824
Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala			
595	600	605	
ggc atg ttc cag gtc acg ttc acg gct gag cgc tct ctg gaa gac gag			1872
Gly Met Phe Gln Val Thr Phe Thr Ala Glu Arg Ser Leu Glu Asp Glu			
610	615	620	
atc aat cgc acc aca gct gaa gac ctg ccc atc ttt gcc acc agc tac			1920
Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr			
625	630	635	640
att gtc ata ttc ctg tac atc tct ctg gcc ctg ggc agc tat tcc agc			1968
Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser			
645	650	655	
tgg agc cga gtg atg gtg gac tcc aag gcc acg ctg ggc ctc ggc ggg			2016
Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly			
660	665	670	
gtg gcc gtg gtc ctg gga gca gtc atg gct gcc atg ggc ttc ttc tcc			2064
Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser			
675	680	685	
tac ttg ggt atc cgc tcc tcc ctg gtc atc ctg caa gtg gtt cct ttc			2112
Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe			
690	695	700	
ctg gtg ctg tcc gtg ggg gct gat aac atc ttc atc ttt gtt ctc gag			2160
Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu			
705	710	715	720
tac cag agg ctg ccc cgg agg cct ggg gag cca cga gag gtc cac att			2208
Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile			
725	730	735	
ggg cga gcc cta ggc agg gtg gct ccc agc atg ctg ttg tgc agc ctc			2256
Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu			
740	745	750	
tct gag gcc atc tgc ttc cta ggg gcc ctg acc ccc atg cca gct			2304
Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala			
755	760	765	
gtg cgg acc ttt gcc ctg acc tct ggc ctt gca gtg atc ctt gac ttc			2352
Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe			

770	775	780	
ctc ctg cag atg tca gcc ttt gtg gcc ctg ctc tcc ctg gac agc aag Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys 785	790	795	2400
agg cag gag gcc tcc cgg ttg gac gtc tgc tgt gtc aag ccc cag Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln 805	810	815	2448
gag ctg ccc ccg cct ggc cag gga gag ggg ctc ctg ctt ggc ttc ttc Glu Leu Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe 820	825	830	2496
caa aag gct tat gcc ccc ttc ctg ctg cac tgg atc act cga ggt gtt Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val 835	840	845	2544
gtg ctg ctg ctg ttt ctc gcc ctg ttc gga gtg agc ctc tac tcc atg Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met 850	855	860	2592
tgc cac atc agc gtg gga ctg gac cag gag ctg gcc ctg ccc aag gac Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp 865	870	875	2640
tcg tac ctg ctt gac tat ttc ctc ttt ctg aac cgc tac ttc gag gtg Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val 885	890	895	2688
ggg gcc ccg gtg tac ttt gtt acc acc ttg ggc tac aac ttc tcc agc Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser 900	905	910	2736
gag gct ggg atg aat gcc atc tgc tcc agt gca ggc tgc aac aac ttc Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe 915	920	925	2784
tcc ttc acc cag aag atc cag tat gcc aca gag ttc cct gag cag tct Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser 930	935	940	2832
tac ctg gcc atc cct gcc tcc tcc tgg gtg gat gac ttc att gac tgg Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp 945	950	955	2880
ctg acc ccg tcc tcc tgc tgc cgc ctt tat ata tct ggc ccc aat aag Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys 965	970	975	2928
gac aag ttc tgc ccc tcg acc gtc aac tct ctg aac tgc cta aag aac Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn 980	985	990	2976
tgc atg agc atc acg atg ggc tct gtg agg ccc tgc gtg gag cag ttc Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe 995	1000	1005	3024
cat aag tat ctt ccc tgg ttc ctg aac gac cgg ccc aac atc aaa His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys 1010	1015	1020	3069

tgt ccc	aaa ggc ggc ctg gca	gca tac agc acc tct	gtg aac ttg	3114
Cys Pro	Lys Gly Gly Leu Ala	Ala Tyr Ser Thr Ser	Val Asn Leu	
1025	1030	1035		
act tca	gat ggc cag gtt tta	gcc tcc agg ttc atg	gcc tat cac	3159
Thr Ser	Asp Gly Gln Val Leu	Ala Ser Arg Phe Met	Ala Tyr His	
1040	1045	1050		
aag ccc	ctg aaa aac tca cag	gat tac aca gaa gct	ctg cgg gca	3204
Lys Pro	Leu Lys Asn Ser Gln	Asp Tyr Thr Glu Ala	Leu Arg Ala	
1055	1060	1065		
gct cga	gag ctg gca gcc aac	atc act gct gac ctg	cgg aaa gtg	3249
Ala Arg	Glu Leu Ala Ala Asn	Ile Thr Ala Asp Leu	Arg Lys Val	
1070	1075	1080		
cct gga	aca gac ccg gct ttt	gag gtc ttc ccc tac	acg atc acc	3294
Pro Gly	Thr Asp Pro Ala Phe	Glu Val Phe Pro Tyr	Thr Ile Thr	
1085	1090	1095		
aat gtg	ttt tat gag cag tac	ctg acc atc ctc cct	gag ggg ctc	3339
Asn Val	Phe Tyr Glu Gln Tyr	Leu Thr Ile Leu Pro	Glu Gly Leu	
1100	1105	1110		
ttc atg	ctc agc ctc tgc ctt	gtg ccc acc ttc gct	gtc tcc tgc	3384
Phe Met	Leu Ser Leu Cys Leu	Val Pro Thr Phe Ala	Val Ser Cys	
1115	1120	1125		
ctc ctg	ctg ggc ctg gac ctg	cgc tcc ggc ctc ctc	aac ctg ctc	3429
Leu Leu	Leu Gly Leu Asp Leu	Arg Ser Gly Leu Leu	Asn Leu Leu	
1130	1135	1140		
tcc att	gtc atg atc ctc gtg	gac act gtc ggc ttc	atg gcc ctg	3474
Ser Ile	Val Met Ile Leu Val	Asp Thr Val Gly Phe	Met Ala Leu	
1145	1150	1155		
tgg gac	atc agt tac aat gct	gtg tcc ctc atc aac	ctg gtc tcg	3519
Trp Asp	Ile Ser Tyr Asn Ala	Val Ser Leu Ile Asn	Leu Val Ser	
1160	1165	1170		
gcg gtg	ggc atg tct gtg gag	ttt gtg tcc cac att	acc cgc tcc	3564
Ala Val	Gly Met Ser Val Glu	Phe Val Ser His Ile	Thr Arg Ser	
1175	1180	1185		
ttt gcc	atc agc acc aag ccc	acc tgg ctg gag agg	gcc aaa gag	3609
Phe Ala	Ile Ser Thr Lys Pro	Thr Trp Leu Glu Arg	Ala Lys Glu	
1190	1195	1200		
gcc acc	atc tct atg gga agt	gcg gtg ttt gca ggt	gtg gcc atg	3654
Ala Thr	Ile Ser Met Gly Ser	Ala Val Phe Ala Gly	Val Ala Met	
1205	1210	1215		
acc aac	ctg cct ggc atc ctt	gtc ctg ggc ctc gcc	aag gcc cag	3699
Thr Asn	Leu Pro Gly Ile Leu	Val Leu Gly Leu Ala	Lys Ala Gln	
1220	1225	1230		
ctc att	cag atc ttc ttc ttc	cgc ctc aac ctc ctg	atc act ctg	3744
Leu Ile	Gln Ile Phe Phe	Arg Leu Asn Leu Leu	Ile Thr Leu	
1235	1240	1245		

ctg ggc	ctg ctg cat ggc ttg	gtc ttc ctg ccc gtc	atc ctc agc	3789
Leu Gly	Leu Leu His Gly Leu	Val Phe Leu Pro Val	Ile Leu Ser	
1250	1255	1260		
tac gtg	ggg cct gac gtt aac	ccg gct ctg gca ctg	gag cag aag	3834
Tyr Val	Gly Pro Asp Val Asn	Pro Ala Leu Ala Leu	Glu Gln Lys	
1265	1270	1275		
cgg gct	gag gag gcg gtg gca	gca gtc atg gtg gcc	tct tgc cca	3879
Arg Ala	Glu Glu Ala Val Ala	Ala Val Met Val Ala	Ser Cys Pro	
1280	1285	1290		
aat cac	ccc tcc cga gtc tcc	aca gct gac aac atc	tat gtc aac	3924
Asn His	Pro Ser Arg Val Ser	Thr Ala Asp Asn Ile	Tyr Val Asn	
1295	1300	1305		
cac agc	ttt gaa ggt tct atc	aaa ggt gct ggt gcc	atc agc aac	3969
His Ser	Phe Glu Gly Ser Ile	Lys Gly Ala Gly Ala	Ile Ser Asn	
1310	1315	1320		
ttc ttg	ccc aac aat ggg cgg	cag ttc tga		3999
Phe Leu	Pro Asn Asn Gly Arg	Gln Phe		
1325	1330			

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Met Ala Glu Ala Gly Leu Arg Gly Trp Leu	Leu Trp Ala Leu Leu	Leu	
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20	25	30

Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro	Glu Leu Ser Gly Ser	
35	40	45

Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser	Asn Thr Pro Ala Arg	
50	55	60

Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln	Lys Ile Cys Pro Arg		
65	70	75	80

Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys	Ser Ala Lys Gln Leu	
85	90	95

Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
100 105 110

Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr
115 120 125

Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln
130 135 140

Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145 150 155 160

Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg
165 170 175

Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr
180 185 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
195 200 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
210 215 220

Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val
225 230 235 240

Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys
245 250 255

Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu
260 265 270

Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile
275 280 285

Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly
290 295 300

Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys
305 310 315 320

Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu
325 330 335

Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro

340

345

350

Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala
355 360 365

Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
370 375 380

Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His
385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn
405 410 415

Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
420 425 430

Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln
435 440 445

Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn
450 455 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr
465 470 475 480

Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn
485 490 495

Asn Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln
500 505 510

Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
515 520 525

Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala
530 535 540

Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys
545 550 555 560

Gly Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu
565 570 575

Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp
580 585 590

Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala
595 600 605

Gly Met Phe Gln Val Thr Phe Thr Ala Glu Arg Ser Leu Glu Asp Glu
610 615 620

Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr
625 630 635 640

Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser
645 650 655

Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
660 665 670

Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser
675 680 685

Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe
690 695 700

Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
705 710 715 720

Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile
725 730 735

Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu
740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe
770 775 780

Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785 790 795 800

Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln
805 810 815

Glu Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe
820 825 830

Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val
835 840 845

Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met
850 855 860

Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
865 870 875 880

Ser Tyr Leu Leu Asp Tyr Phe Leu Asn Arg Tyr Phe Glu Val
885 890 895

Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser
900 905 910

Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe
915 920 925

Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser
930 935 940

Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
945 950 955 960

Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys
965 970 975

Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn
980 985 990

Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe
995 1000 1005

His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys
1010 1015 1020

Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu
1025 1030 1035

Thr Ser Asp Gly Gln Val Leu Ala Ser Arg Phe Met Ala Tyr His
1040 1045 1050

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Ala Arg Glu Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys Val
1070 1075 1080

Pro Gly Thr Asp Pro Ala Phe Glu Val Phe Pro Tyr Thr Ile Thr
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Asn Val Phe Tyr Glu Gln Tyr Leu Thr Ile Leu Pro Glu Gly Leu
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Phe Met Leu Ser Leu Cys Leu Val Pro Thr Phe Ala Val Ser Cys
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Leu Leu Leu Gly Leu Asp Leu Arg Ser Gly Leu Leu Asn Leu Leu
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Ser Ile Val Met Ile Leu Val Asp Thr Val Gly Phe Met Ala Leu
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Trp Asp Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser
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Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg Ser
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Phe Ala Ile Ser Thr Lys Pro Thr Trp Leu Glu Arg Ala Lys Glu
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Thr Asn Leu Pro Gly Ile Leu Val Leu Gly Leu Ala Lys Ala Gln
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Leu Ile Gln Ile Phe Phe Arg Leu Asn Leu Leu Ile Thr Leu
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Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Ile Leu Ser
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Tyr Val Gly Pro Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys
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Arg Ala Glu Glu Ala Val Ala Ala Val Met Val Ala Ser Cys Pro
1280 1285 1290

Asn His Pro Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn

1295

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1305

His Ser Phe Glu Gly Ser Ile Lys Gly Ala Gly Ala Ile Ser Asn
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<211> 885

<212> DNA

<213> Rattus sp.

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<211> 458

<212> DNA

<213> Rattus sp.

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<211> 896

<212> DNA

<213> Rattus sp.

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<212> DNA

<213> Rattus sp.

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<213> Rattus sp.

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Ser Ala Gln Gly Glu Leu Tyr Thr Pro Thr His Lys Ala Gly Phe Cys	
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acc ttt tat gaa gag tgt ggg aag aac cca gag ctt tct gga ggc ctc	144
Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu	
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aca tca cta tcc aat atc tcc tgc ttg tct aat acc cca gcc cgc cat	192
Thr Ser Leu Ser Asn Ile Ser Cys Leu Ser Asn Thr Pro Ala Arg His	
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Val Thr Gly Asp His Leu Ala Leu Leu Gln Arg Val Cys Pro Arg Leu	
65 70 75 80	
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Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu	
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Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg	
100 105 110	
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Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr	
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tgc agc cct gac cag agc ctc ttc atc aat gtt act cgc gtg gtt cag	432

Cys	Ser	Pro	Asp	Gln	Ser	Leu	Phe	Ile	Asn	Val	Thr	Arg	Val	Val	Gln	
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cgg gac cct gga cag ctt cct gct gtg gtg gcc tat gag gcc ttt tat															480	
Arg	Asp	Pro	Gly	Gln	Leu	Pro	Ala	Val	Val	Ala	Tyr	Glu	Ala	Phe	Tyr	
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caa cgc agt ttt gca gag aag gcc tat gag tcc tgt agc cgg gtg cgc															528	
Gln	Arg	Ser	Phe	Ala	Glu	Lys	Ala	Tyr	Glu	Ser	Cys	Ser	Arg	Val	Arg	
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Ile	Pro	Ala	Ala	Ala	Ser	Leu	Ala	Val	Gly	Ser	Met	Cys	Gly	Val	Tyr	
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ggc tct gcc ctc tgc aat gct cag cgc tgg ctc aac ttc caa gga gac															624	
Gly	Ser	Ala	Leu	Cys	Asn	Ala	Gln	Arg	Trp	Leu	Asn	Phe	Gln	Gly	Asp	
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aca ggg aat ggc ctg gct ccg ctg gac atc acc ttc cac ctc ttg gag															672	
Thr	Gly	Asn	Gly	Leu	Ala	Pro	Leu	Asp	Ile	Thr	Phe	His	Leu	Leu	Glu	
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Pro	Gly	Gln	Ala	Leu	Ala	Asp	Gly	Met	Lys	Pro	Leu	Asp	Gly	Lys	Ile	
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aca ccc tgc aat gag tcc cag ggt gaa gac tcg gca gcc tgt tcc tgc															768	
Thr	Pro	Cys	Asn	Glu	Ser	Gln	Gly	Glu	Asp	Ser	Ala	Ala	Cys	Ser	Cys	
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cag gac tgt gca gca tcc tgc cct gtc atc cct ccg ccc ccg gcc ctg															816	
Gln	Asp	Cys	Ala	Ala	Ser	Cys	Pro	Val	Ile	Pro	Pro	Pro	Pro	Ala	Leu	
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Arg	Pro	Ser	Phe	Tyr	Met	Gly	Arg	Met	Pro	Gly	Trp	Leu	Ala	Leu	Ile	
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Ile	Ile	Phe	Thr	Ala	Val	Phe	Val	Leu	Leu	Ser	Val	Val	Leu	Val	Tyr	
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ctc cga gtg gct tcc aac agg aac aag aac aag aca gca ggc tcc cag															960	
Leu	Arg	Val	Ala	Ser	Asn	Arg	Asn	Lys	Asn	Lys	Thr	Ala	Gly	Ser	Gln	
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gaa gcc ccc aac ctc cct cgt aag cgc aga ttc tca cct cac act gtc															1008	
Glu	Ala	Pro	Asn	Leu	Pro	Arg	Lys	Arg	Arg	Phe	Ser	Pro	His	Thr	Val	
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ctt ggc cgg ttc ttc gag agc tgg gga aca agg gtg gcc tca tgg cca															1056	
Leu	Gly	Arg	Phe	Phe	Glu	Ser	Trp	Gly	Thr	Arg	Val	Ala	Ser	Trp	Pro	
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ctc act gtc ttg gca ctg tcc ttc ata gtt gtg ata gcc ttg tca gta															1104	
Leu	Thr	Val	Leu	Ala	Leu	Ser	Phe	Ile	Val	Val	Ile	Ala	Leu	Ser	Val	
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Gly	Leu	Thr	Phe	Ile	Glu	Leu	Thr	Thr	Asp	Pro	Val	Glu	Leu	Trp	Ser	

370	375	380	
gcc cct aaa agc caa gcc cg ^g aaa gaa aag gct ttc cat gac gag cat			1200
Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ala Phe His Asp Glu His			
385	390	395	400
ttt ggc ccc ttc ttc cga acc aac cag att ttt gtg aca gct aag aac			1248
Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Lys Asn			
405	410	415	
agg tcc agc tac aag tac gac tcc ctg ctg cta ggg ccc aag aac ttc			1296
Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe			
420	425	430	
agt ggg atc cta tcc ctg gac ttg ctg cag gag ctg ttg gag cta cag			1344
Ser Gly Ile Leu Ser Leu Asp Leu Leu Gln Glu Leu Leu Glu Leu Gln			
435	440	445	
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Glu Arg Leu Arg His Leu Gln Val Trp Ser His Glu Ala Gln Arg Asn			
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Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro His Asn Thr			
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agc ctc act gac tgc tgt gtc aac agc ctc ctt caa tac ttc cag aac			1488
Ser Leu Thr Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn			
485	490	495	
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Asn His Thr Leu Leu Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln			
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acc tcc ctg gtg gac tgg aag gac cat ttc ctc tac tgt gcc aat gcc			1584
Thr Ser Leu Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala			
515	520	525	
cct ctc acg tac aaa gat ggc aca gcc ctg gcc ctg agc tgc ata gct			1632
Pro Leu Thr Tyr Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Ile Ala			
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gac tac ggg gca cct gtc ttc ccc ttc ctt gct gtt ggg ggc tac caa			1680
Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Val Gly Gly Tyr Gln			
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Gly Thr Asp Tyr Ser Glu Ala Glu Ala Leu Ile Ile Thr Phe Ser Ile			
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Asn Asn Tyr Pro Ala Asp Asp Pro Arg Met Ala His Ala Lys Leu Trp			
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gag gag gct ttc ttg aag gaa atg caa tcc ttc cag aga agc aca gct			1824
Glu Glu Ala Phe Leu Lys Glu Met Gln Ser Phe Gln Arg Ser Thr Ala			
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Asp Lys Phe Gln Ile Ala Phe Ser Ala Glu Arg Ser Leu Glu Asp Glu			
610	615	620	

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tac cag agg ctg cct agg atg ccc ggg gag cag cga gag gct cac att Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile 725 730 735	2208
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tct gag gcc atc tgc ttc ttt cta ggg gcc ctg acc tcc atg cca gct Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Ser Met Pro Ala 755 760 765	2304
gtg agg acc ttt gcc ttg acc tct ggc tta gca atc atc ttt gac ttc Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Phe Asp Phe 770 775 780	2352
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Ile	Phe	Thr	Leu	Ala	Leu	Cys	Phe	Val	Pro	Thr	Phe	Val	Val	Cys	
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Tyr	Leu	Leu	Leu	Gly	Leu	Asp	Ile	Arg	Ser	Gly	Ile	Leu	Asn	Leu	
1130					1135						1140				
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Leu	Ser	Ile	Ile	Met	Ile	Leu	Val	Asp	Thr	Ile	Gly	Leu	Met	Ala	
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Asp	Ala	Thr	Ile	Phe	Met	Gly	Ser	Ala	Val	Phe	Ala	Gly	Val	Ala	
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Gln	Leu	Ile	Gln	Ile	Phe	Phe	Phe	Arg	Leu	Asn	Leu	Leu	Ile	Thr	
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Leu	Leu	Gly	Leu	Leu	His	Gly	Leu	Val	Phe	Leu	Pro	Val	Val	Leu	
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Ser	Tyr	Leu	Gly	Pro	Asp	Val	Asn	Gln	Ala	Leu	Val	Leu	Glu	Glu	
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Lys	Leu	Ala	Thr	Glu	Ala	Ala	Met	Val	Ser	Glu	Pro	Ser	Cys	Pro	
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Gln	Tyr	Pro	Phe	Pro	Ala	Asp	Ala	Asn	Thr	Ser	Asp	Tyr	Val	Asn	
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Val Thr Gly Asp His Leu Ala Leu Leu Gln Arg Val Cys Pro Arg Leu
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Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu
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Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
100 105 110

Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr
115 120 125

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Arg Asp Pro Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145 150 155 160

Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Arg Val Arg
165 170 175

Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr
180 185 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
195 200 205

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Ser Gly Ile Leu Ser Leu Asp Leu Leu Gln Glu Leu Leu Glu Leu Gln
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610 615 620

Ile Asn Arg Thr Thr Ile Gln Asp Leu Pro Val Phe Ala Ile Ser Tyr
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Trp Ser Arg Val Ala Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
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675 680 685

Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe
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725 730 735

Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu
740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Ser Met Pro Ala
755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Phe Asp Phe
770 775 780

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Asn Leu Pro Pro Lys Gln Lys Glu Gly Leu Leu Leu Cys Phe Phe
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Cys Asn Ile Ser Val Gly Leu Asp Gln Asp Leu Ala Leu Pro Lys Asp
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Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val
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Gly Pro Pro Val Tyr Phe Asp Thr Thr Ser Gly Tyr Asn Phe Ser Thr
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Lys Asp Glu Phe Cys Pro Ser Thr Asp Thr Ser Phe Asn Cys Leu Lys
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Asn Cys Met Asn Arg Thr Leu Gly Pro Val Arg Pro Thr Thr Glu Gln
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Phe His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Thr Pro Asn Ile
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Ser Phe Ala Val Ser Thr Lys Pro Thr Arg Leu Glu Arg Ala Lys
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Gln Leu Ile Gln Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr
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Lys Leu Ala Thr Glu Ala Ala Met Val Ser Glu Pro Ser Cys Pro
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Gln Tyr Pro Phe Pro Ala Asp Ala Asn Thr Ser Asp Tyr Val Asn
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Ala Glu Ala Gly Leu Arg Gly Trp Leu Leu Trp Ala Leu Leu Leu Arg
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Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr Cys
20 25 30

gcc ttc tat gac gaa tgt ggg aag aac cca gag ctg tct gga agc ctc 203
Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser Leu
35 40 45

atg aca ctc tcc aac gtg tcc tgc ctg tcc aac acg ccg gcc cgc aag 251
Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg Lys
50 55 60 65

atc aca ggt gat cac ctg atc cta tta cag aag atc tgc ccc cgc ctc 299
Ile Thr Gly Asp His Leu Ile Leu Gln Lys Ile Cys Pro Arg Leu
70 75 80

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Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu Val
85 90 95

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Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg Cys
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Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn Ile	
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tcc ctg cag gac atc tgc tac gcc ccc ctc aat ccg gac aat acc agt	1499
Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr Ser	
470 475 480 485	
ctc tac gac tgc tgc atc aac agc ctc ctg cag tat ttc cag aac aac	1547
Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn Asn	
485 490 495	
cgc acg ctc ctg ctc aca gcc aac cag aca ctg atg ggg cag acc	1595
Arg Thr Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln Thr	
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Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala Pro	
515 520 525	
ctc acc ttc aag gat ggc aca gcc ctg gcc ctg agc tgc atg gct gac	1691
Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala Asp	
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Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys Gly	
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aag gac tat tct gag gca gag gcc ctg atc atg acg ttc tcc ctc aac	1787
Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu Asn	
565 570 575	
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Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp Glu	
580 585 590	
gag gcc ttc tta gag gaa atg cga gcc ttc cag cgt cgg atg gct ggc	1883

Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala Gly			
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Met Phe Gln Val Thr Phe Met Ala Glu Arg Ser Leu Glu Asp Glu Ile			
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aat cgc acc aca gct gaa gac ctg ccc atc ttt gcc acc agc tac att		1979	
Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr Ile			
630	635	640	
gtc ata ttc ctg tac atc tct ctg gcc ctg ggc agc tat tcc agc tgg		2027	
Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser Trp			
645	650	655	
agc cga gtg atg gtg gac tcc aag gcc acg ctg ggc ctc ggc ggg gtg		2075	
Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly Val			
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gcc gtg gtc ctg gga gca gtc atg gct gcc atg ggc ttc ttc tcc tac		2123	
Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser Tyr			
675	680	685	
ttg ggt atc cgc tcc tcc ctg gtc atc ctg caa gtg gtt cct ttc ctg		2171	
Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe Leu			
690	695	700	705
gtg ctg tcc gtg ggg gct gat aac atc ttc atc ttt gtt ctc gag tac		2219	
Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu Tyr			
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cag agg ctg ccc cg ^g agg cct ggg gag cca cga gag gtc cac att ggg		2267	
Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile Gly			
725	730	735	
cga gcc cta ggc agg gtg gct ccc agc atg ctg ttg tgc agc ctc tct		2315	
Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu Ser			
740	745	750	
gag gcc atc tgc ttc cta ggg gcc ctg acc ccc atg cca gct gtg		2363	
Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala Val			
755	760	765	
cg ^g acc ttt gcc ctg acc tct ggc ctt gca gtg atc ctt gac ttc ctc		2411	
Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe Leu			
770	775	780	785
ctg cag atg tca gcc ttt gtg gcc ctg ctc tcc ctg gac agc aag agg		2459	
Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys Arg			
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Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln Glu			
805	810	815	
ctg ccc ccg cct ggc cag gga gag ggg ctc ctg ctt ggc ttc ttc caa		2555	
Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe Gln			
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aag gct tat gcc ccc ttc ctg ctg cac tgg atc act cga ggt gtt gtg		2603	
Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val Val			

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ctg ctg ctg ttt ctc gcc ctg ttc gga gtg agc ctc tac tcc atg tgc Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met Cys 850	855	860	865
cac atc agc gtg gga ctg gac cag gag ctg gcc ctg ccc aag gac tcg His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp Ser 870	875		880
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gcc ccg gtg tac ttt gtt acc acc ttg ggc tac aac ttc tcc agc gag Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser Glu 900	905		910
gct ggg atg aat gcc atc tgc tcc agt gca ggc tgc aac aac ttc tcc Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe Ser 915	920		925
ttc acc cag aag atc cag tat gcc aca gag ttc cct gag cag tct tac Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser Tyr 930	935	940	945
ctg gcc atc cct gcc tcc tcc tgg gtg gat gac ttc att gac tgg ctg Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp Leu 950	955		960
acc ccg tcc tcc tgc tgc cgc ctt tat ata tct ggc ccc aat aag gac Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys Asp 965	970		975
aag ttc tgc ccc tcg acc gtc aac tct ctg aac tgc cta aag aac tgc Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn Cys 980	985		990
atg agc atc acg atg ggc tct gtg agg ccc tcg gtg gag cag ttc cat Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe His 995	1000		1005
aag tat ctt ccc tgg ttc ctg aac gac cgg ccc aac atc aaa tgt Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys Cys 1010	1015		1020
ccc aaa ggc ggc ctg gca gca tac agc acc tct gtg aac ttg act Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu Thr 1025	1030		1035
tca gat ggc cag gtt tta gac aca gtt gcc att ctg tca ccc agg Ser Asp Gly Gln Val Leu Asp Thr Val Ala Ile Leu Ser Pro Arg 1040	1045		1050
ctg gag tac agt ggc aca atc tcg gct cac tgc aac ctc tac ctc Leu Glu Tyr Ser Gly Thr Ile Ser Ala His Cys Asn Leu Tyr Leu 1055	1060		1065
ctg gat tca gcc tcc agg ttc atg gcc tat cac aag ccc ctg aaa Leu Asp Ser Ala Ser Arg Phe Met Ala Tyr His Lys Pro Leu Lys 1070	1075		1080

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Asn	Ser	Gln	Asp	Tyr	Thr	Glu	Ala	Leu	Arg	Ala	Ala	Arg	Glu	Leu	
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gca	gcc	aac	atc	act	gct	gac	ctg	cg	aaa	gtg	cct	gga	aca	gac	3398
Ala	Ala	Asn	Ile	Thr	Ala	Asp	Leu	Arg	Lys	Val	Pro	Gly	Thr	Asp	
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ccg	gct	ttt	gag	gtc	ttc	ccc	tac	acg	atc	acc	aat	gtg	ttt	tat	3443
Pro	Ala	Phe	Glu	Val	Phe	Pro	Tyr	Thr	Ile	Thr	Asn	Val	Phe	Tyr	
1115					1120					1125					
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Glu	Gln	Tyr	Leu	Thr	Ile	Leu	Pro	Glu	Gly	Leu	Phe	Met	Leu	Ser	
1130					1135					1140					
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Leu	Cys	Leu	Val	Pro	Thr	Phe	Ala	Val	Ser	Cys	Leu	Leu	Leu	Gly	
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Leu	Asp	Leu	Arg	Ser	Gly	Leu	Leu	Asn	Leu	Leu	Ser	Ile	Val	Met	
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Ile	Leu	Val	Asp	Thr	Val	Gly	Phe	Met	Ala	Leu	Trp	Gly	Ile	Ser	
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Tyr	Asn	Ala	Val	Ser	Leu	Ile	Asn	Leu	Val	Ser	Ala	Val	Gly	Met	
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Ser	Val	Glu	Phe	Val	Ser	His	Ile	Thr	Arg	Ser	Phe	Ala	Ile	Ser	
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Thr	Lys	Pro	Thr	Trp	Leu	Glu	Arg	Ala	Lys	Glu	Ala	Thr	Ile	Ser	
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Phe	Phe	Phe	Arg	Leu	Asn	Leu	Leu	Ile	Thr	Leu	Leu	Gly	Leu	Leu	
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Asp	Val	Asn	Pro	Ala	Leu	Ala	Leu	Glu	Gln	Lys	Arg	Ala	Glu	Glu	
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Gly	Ser	Ile	Lys	Gly	Ala	Gly	Ala	Ile	Ser	Asn	Phe	Leu	Pro	Asn	
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Asn	Gly	Arg	Gln	Phe											
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Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser
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Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg
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Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg
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Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu
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Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
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Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr
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Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln
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Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
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Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg
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Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr
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Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
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Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
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Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val
225 230 235 240

Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys

245

250

255

Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu
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Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile
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Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly
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Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys
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Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu
 325 330 335

Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro
 340 345 350

Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala
 355 360 365

Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
 370 375 380

Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His
 385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn
 405 410 415

Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
 420 425 430

Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln
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Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn
 450 455 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr
 465 470 475 480

Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn
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Asn Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln
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Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
515 520 525

Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala
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Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys
545 550 555 560

Gly Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu
565 570 575

Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp
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Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala
595 600 605

Gly Met Phe Gln Val Thr Phe Met Ala Glu Arg Ser Leu Glu Asp Glu
610 615 620

Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr
625 630 635 640

Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser
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Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
660 665 670

Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser
675 680 685

Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe
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Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
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Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile
725 730 735

Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu
740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe
770 775 780

Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785 790 795 800

Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln
805 810 815

Glu Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe
820 825 830

Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val
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Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met
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Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
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Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val
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Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser
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Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe
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Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser
930 935 940

Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
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Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys
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Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn
980 985 990

Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe
995 1000 1005

His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys
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Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu
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Thr Ser Asp Gly Gln Val Leu Asp Thr Val Ala Ile Leu Ser Pro
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Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys Val Pro Gly Thr
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Asp Pro Ala Phe Glu Val Phe Pro Tyr Thr Ile Thr Asn Val Phe
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Tyr Glu Gln Tyr Leu Thr Ile Leu Pro Glu Gly Leu Phe Met Leu
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Ser Leu Cys Leu Val Pro Thr Phe Ala Val Ser Cys Leu Leu Leu
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Gly Leu Asp Leu Arg Ser Gly Leu Leu Asn Leu Leu Ser Ile Val
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Met Ile Leu Val Asp Thr Val Gly Phe Met Ala Leu Trp Gly Ile
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Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser Ala Val Gly
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Met Ser Val Glu Phe Val Ser His Ile Thr Arg Ser Phe Ala Ile

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1210

1215

Ser Thr Lys Pro Thr Trp Leu Glu Arg Ala Lys Glu Ala Thr Ile
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Pro Gly Ile Leu Val Leu Gly Leu Ala Lys Ala Gln Leu Ile Gln
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Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr Leu Leu Gly Leu
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Leu His Gly Leu Val Phe Leu Pro Val Ile Leu Ser Tyr Val Gly
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Glu Ala Val Ala Ala Val Met Val Ala Ser Cys Pro Asn His Pro
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Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn His Ser Phe
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